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- (71) Applicant (for all designated States except US): **SPRING-BOOST S.A.** [CH/CH]; Chemin de la Dauphine 9, CH-1291 Commugny (CH).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **FUCHSLOCHER, Jörg** [DE/CH]; 33, route de Bramblens, CH-1027 Lonay (CH). **BEHROUZ, Bayat** [IR/CH]; Ave. du Servan 25, CH-1006 Lausanne (CH).
- (74) Agent: **MOETTELI, John**; Moetteli & Associés, Case postale 486, CH-1211 Genève 12 (CH).

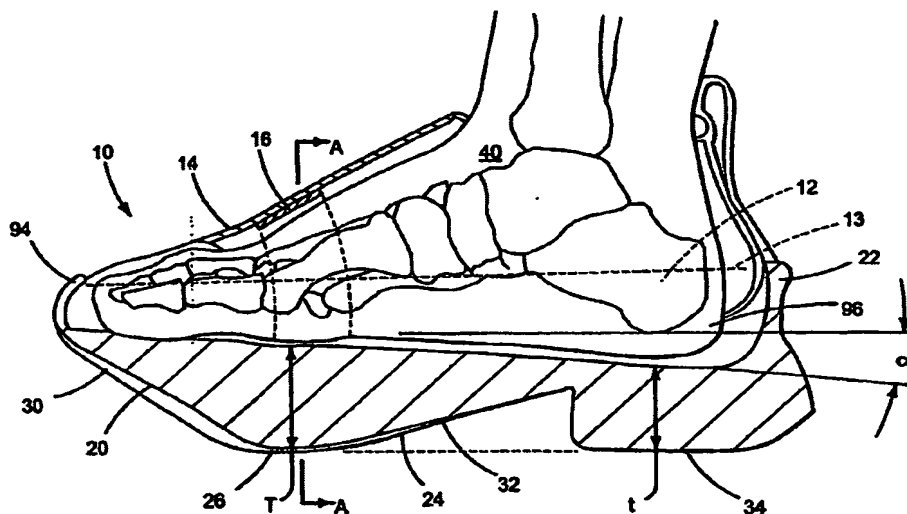
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(54) Title: **IMPROVED DORSIFLEXION SHOE**



(57) **Abstract:** A high performance dorsiflexion shoe has a sole and a constraining device above the metatarsal-phalangeal joint. The sole has a ground-contacting surface, a forefoot region, a midfoot region and a heel portion. The forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole, greater than the thickness of the heel portion, thereby defining a characteristic angle of declination from the forefoot region to the heel portion. The constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising. The forefoot region has a curved form defined so as to further minimize flexion of the metatarsalphalangeal joint.

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(75) Inventors/Applicants (for US only): **FUCHSLOCHER,
Joerg** [DE/CH]; Springboost S.A., EPFL PSE-A, CH-1015
Lausanne (CH). **BEHROUZ, Bayat** [IR/CH]; Ave. du Ser-
van 25, CH-1006 Lausanne (CH).

(74) Agent: **MOETTEL, John**; Moetiteli & Associés SARL,
St Leonhardstrasse 4, CH-9000 St. Gallen (CH).

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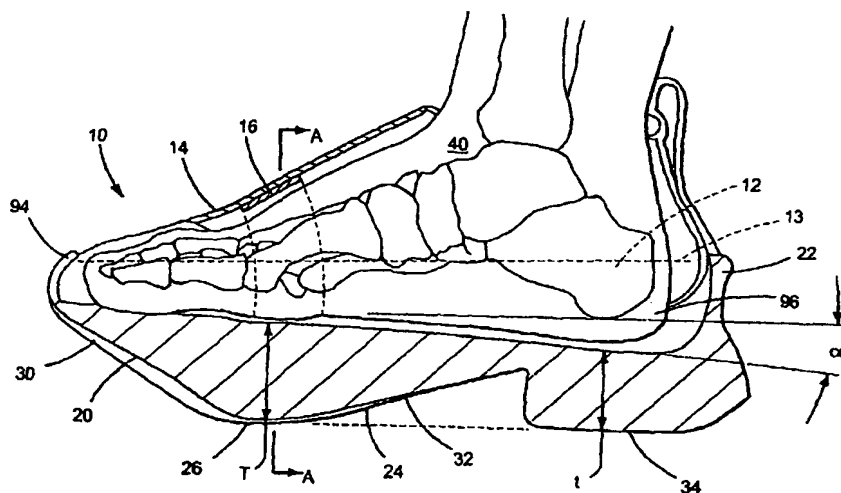
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(54) Title: IMPROVED DORSIFLEXION SHOE



(57) Abstract: A high performance dorsiflexion shoe (10) has a sole and a constraining device (16) above the metatarsal-phalangeal joint. The sole has a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34). The forefoot region (30) is made of a high density material, and has a thickness (T), measured in a direction perpendicular to the ground-contacting surface (26) of the sole, greater than the thickness (t) of the heel portion, thereby defining a characteristic angle (α) of declination from the forefoot region (30) to the heel portion (34). The constraining device (16) substantially constrains a wearer's metatarsal-phalangeal joints (20) from movement when exercising. The forefoot region has a curved form (28) defined so as to further minimize flexion of the metatarsal-phalangeal joint (20).

WO 2004/105546 A3



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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[received by the International Bureau on 02 February 2005 (02.02.05);
original claims 1 and 2 amended; remaining claims unchanged (1 page)]

1. A high performance dorsiflexion shoe for enveloping a foot (40) of a wearer, including the wearer's metatarsal-phalangeal joint (20), the shoe comprising

(a) a sole portion (24) having a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34), and

(b) a constraining device (16) above the metatarsal-phalangeal joint;

wherein the forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole portion, greater than the thickness of the heel portion, thereby defining a dorsiflexion shoe having a characteristic angle (α) of declination from the forefoot region to the heel portion;

wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising,

wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running and

wherein the sole portion (24) is a component of a shell (12) which includes sidewall portions (22) extending upwardly from the sole portion.

2. The shoe of claim 1, wherein the sidewall portions (22) extend upwardly from the sole portion to a circumferential edge (13) which surrounds the wearer's foot (40).
3. The shoe of claim 2, wherein the circumferential edge (13) is higher in the heel region (34) than in the forefoot region (30), thus giving the outward appearance of a plantarflex shoe.
4. The shoe of claim 1, wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24).
5. The shoe of claim 4, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes reinforcing ribs (90).